

RND Warehouse Management

version 1.0.0

ERPNext v15+

license MIT

python 3.8+

A professional warehouse management system for ERPNext with SAP-style movement types, dual-signature workflows, and comprehensive Red/Green zone logic for efficient material handling and production planning.



Features



SAP Movement Type Integration

- **261 (FrontFlush)**: Goods Issue for Production with warehouse supervisor approval
- **311 (BackFlush)**: Transfer for Kitting with dual-signature approval workflow
- Automated warehouse type validation and material flow control



Dual-Signature Approval Workflow

- **Warehouse Supervisor**: First-level approval for all material movements
- **Kitting Supervisor**: Second-level approval for SAP 311 movements
- Digital signature capture with timestamp tracking
- Role-based permissions and workflow state management



Red/Green Zone Logic

- **Red Zone**: Incomplete material availability - Work Orders cannot proceed
- **Green Zone**: All materials available - Work Orders ready for production

- Real-time material completion percentage calculation
- Automated zone status updates based on stock availability

GI/GT Slip Generation

- Professional print format with signature display
- Automated slip numbering and generation
- Email integration for slip distribution
- Mobile-responsive design for field operations



Advanced Warehouse Management

- **Warehouse Types:** Raw Material, Work In Progress, Finished Goods, Transit, Rejected
- **Transit Warehouses:** Virtual tracking for materials in movement
- **Temperature Control:** Optional temperature monitoring for sensitive materials
- **Capacity Management:** Warehouse utilization tracking and alerts



Reporting & Analytics

- Daily warehouse utilization reports
- Material shortage analysis
- Zone status trending
- Approval workflow metrics



Quick Start

Prerequisites

- ERPNext v15.0 or higher
- Frappe Framework v15.0 or higher

- Python 3.8 or higher
- Active ERPNext instance with administrator access

Installation

1. Get the app from GitHub

```
bash cd ~/frappe-bench bench get-app https://github.com/minimax/rnd_warehouse_management.git
```

2. Install on your site

```
bash bench --site [your-site-name] install-app rnd_warehouse_management
```

3. Restart and migrate

```
bash bench restart bench --site [your-site-name] migrate
```

4. Clear cache and build assets

```
bash bench --site [your-site-name] clear-cache bench build
```

Quick Configuration

1. Assign Roles

- Go to User Management → Role Assignment
- Assign "Warehouse Supervisor" role to warehouse staff
- Assign "Kitting Supervisor" role to kitting staff
- Assign "Zone Manager" role to production planners

2. Configure Warehouses

- Set warehouse types (Raw Material, Work In Progress, Finished Goods, etc.)
- Configure transit warehouses for material movement tracking
- Set up temperature control settings if required

3. Test Workflow

- Create a test Stock Entry with SAP Movement Type
- Verify signature capture and approval workflow
- Generate and review GI/GT Slip output

Usage Guide

Creating SAP-Style Stock Entries

1. **Navigate to Stock → Stock Entry**
2. **Select Purpose:** Material Issue (261) or Material Transfer (311)
3. **Choose SAP Movement Type:**
 - Select "261 (FrontFlush)" for goods issue to production
 - Select "311 (BackFlush)" for kitting transfers
4. **Link Work Order:** Associate with relevant Work Order for zone tracking
5. **Add Items:** Select items and specify source/target warehouses
6. **Save and Submit:** Follow the dual-signature approval workflow

Approval Workflow Process

1. **Draft State:** Initial creation by Stock User or Warehouse Supervisor
2. **Warehouse Approval:** Warehouse Supervisor provides digital signature
3. **Kitting Approval** (SAP 311 only): Kitting Supervisor provides second signature
4. **Final Submission:** System automatically submits and generates GI/GT Slip

Zone Status Management

1. **Work Order Creation:** System automatically sets to Red Zone
2. **Material Assessment:** Real-time calculation of material availability
3. **Zone Transition:** Automatic Red → Green when all materials available
4. **Production Planning:** Use Green Zone status to prioritize Work Orders

GI/GT Slip Generation

1. **Automatic Generation:** Created upon final approval
2. **Print Options:** Use "Print GI/GT Slip" button for formatted output

3. **Email Distribution:** Send via email to relevant stakeholders
4. **Mobile Access:** Responsive design for field operations

Configuration

Warehouse Setup

```
# Recommended warehouse hierarchy
Company
├── Raw Materials Division
│   ├── Raw Material Main (Type: Raw Material)
│   ├── Raw Material Transit (Type: Transit)
│   └── Raw Material Rejected (Type: Rejected)
├── Production Division
│   ├── Production WIP (Type: Work In Progress)
│   ├── Kitting Area (Type: Work In Progress)
│   ├── Production Transit (Type: Transit)
│   └── Production Rejected (Type: Rejected)
└── Finished Goods Division
    ├── FG Main (Type: Finished Goods)
    ├── FG to Sell (Type: Finished Goods)
    ├── FG Transit (Type: Transit)
    └── FG Rejected (Type: Rejected)
```

Role Permissions

Role	Stock Entry	Work Order	Warehouse	Workflow Actions
Warehouse Supervisor	Create, Read, Write, Submit	Read	Read, Write	Warehouse Approve
Kitting Supervisor	Read, Write, Submit	Read	Read	Kitting Approve
Zone Manager	Read	Read, Write	Read	View Reports
Stock User	Create, Read, Write	Read	Read	Submit for Approval

SAP Movement Type Configuration

```
{
  "261": {
    "name": "FrontFlush - Goods Issue for Production",
    "purpose": "Material Issue",
    "required_signatures": ["warehouse_supervisor"],
    "allowed_source_types": ["Raw Material", "Work In Progress"],
    "allowed_target_types": ["Work In Progress", "Production WIP"]
  },
  "311": {
    "name": "BackFlush - Transfer for Kitting",
    "purpose": "Material Transfer",
    "required_signatures": ["warehouse_supervisor",
"kitting_supervisor"],
    "allowed_source_types": ["Work In Progress"],
    "allowed_target_types": ["Work In Progress", "Kitting Area"]
  }
}
```

API Reference

Server-Side Methods

Work Order Zone Status

```
# Update Work Order zone status
frappe.call({
    method:
    'rnd_warehouse_management.warehouse_management.work_order.update_work_order_zone_status',
    args: { work_order_name: 'WO-001' }
})

# Get material status
frappe.call({
    method:
    'rnd_warehouse_management.warehouse_management.work_order.get_work_order_material_status',
    args: { work_order_name: 'WO-001' }
})
```

Warehouse Management

```
# Create warehouse hierarchy
frappe.call({
    method:
    'rnd_warehouse_management.warehouse_management.warehouse.create_warehouse_hiera
    args: { company: 'Your Company', locations: ['AMB-W'] }
})

# Get warehouse dashboard data
frappe.call({
    method:
    'rnd_warehouse_management.warehouse_management.warehouse.get_warehouse_dashboar
    args: { warehouse: 'Warehouse Name' }
})
```

Custom Stock Entry

```
# Create custom stock entry with SAP movement type
frappe.call({
    method:
    'rnd_warehouse_management.warehouse_management.stock_entry.make_custom_stock_en
    args: { work_order: 'WO-001', purpose: 'Material Issue', qty:
10 }
})
```


Client-Side Hooks

Stock Entry Form Events

```
// SAP Movement Type change
frappe.ui.form.on('Stock Entry', {
    custom_sap_movement_type: function(frm) {
        // Validates movement type and updates UI
    }
});

// Signature capture
frappe.ui.form.on('Stock Entry', {
    custom_warehouse_supervisor_signature: function(frm) {
        // Handles signature timestamp and validation
    }
});
```



Monitoring & Maintenance

Scheduled Tasks

- **Hourly:** Update Work Order zone status
- **Daily:** Clean up expired signatures, generate warehouse reports
- **Weekly:** Send warehouse utilization summaries

Log Monitoring

```
# Check app-specific logs
bench --site [site-name] logs

# Monitor zone status updates
grep "Zone status" ~/frappe-bench/logs/[site-name].log

# Track signature workflow
grep "Signature" ~/frappe-bench/logs/[site-name].log
```

Performance Optimization

1. **Database Indexing:** Ensure proper indexes on custom fields
2. **Cache Management:** Clear cache after configuration changes
3. **Background Jobs:** Monitor queue for scheduled tasks
4. **Image Storage:** Optimize signature image compression



Migration & Updates

Version Updates

```
# Update from GitHub
cd ~/frappe-bench/apps/rnd_warehouse_management
git pull origin main

# Update site
cd ~/frappe-bench
bench --site [site-name] migrate
bench restart
```

Data Migration

The app includes automatic migration patches:

- **v1.0.0:** Setup warehouse types, create workflows, update existing data
- Custom fields are automatically added via fixtures
- Existing Stock Entries are updated with default SAP movement types

Troubleshooting

Common Issues

Signature Fields Not Showing

```
# Clear cache and reload
bench --site [site-name] clear-cache
bench --site [site-name] reload-doctype "Stock Entry"
```

Workflow Not Working

```
# Check workflow status
bench --site [site-name] console
>>> frappe.get_doc("Workflow", "Stock Entry Dual Signature
Approval")
```

Zone Status Not Updating

```
# Manually trigger zone status update
bench --site [site-name] execute
rnd_warehouse_management.warehouse_management.tasks.update_zone_status
```

Permission Issues

```
# Reset permissions
bench --site [site-name] console
>>> frappe.clear_cache()
>>> frappe.db.commit()
```

Debug Mode

```
# Enable debug logging in hooks.py
logger = frappe.logger("rnd_warehouse_management", file_count=5)
logger.setLevel(frappe.logging.DEBUG)
```

Contributing

We welcome contributions! Please see our [Contributing Guidelines](#) for details.

Development Setup

```
# Fork and clone
git clone https://github.com/your-username/
rnd_warehouse_management.git
cd rnd_warehouse_management

# Create development branch
git checkout -b feature/your-feature-name

# Install in development mode
cd ~/frappe-bench
bench get-app ~/path/to/rnd_warehouse_management
bench --site development.localhost install-app
rnd_warehouse_management
```

Testing

```
# Run tests
bench --site [site-name] run-tests --app rnd_warehouse_management

# Test specific module
bench --site [site-name] run-tests --app rnd_warehouse_management
--module rnd_warehouse_management.tests.test_stock_entry
```

License

This project is licensed under the MIT License - see the [LICENSE](#) file for details.

Support

For support, please contact:

- **Email:** support@minimax.com
- **GitHub Issues:** [Create an issue](#)
- **Documentation:** [Wiki](#)

Roadmap

Version 1.1.0 (Planned)

- ☐ Mobile app integration
- ☐ Barcode scanning support
- ☐ Advanced analytics dashboard
- ☐ Multi-language support
- ☐ API rate limiting

Version 1.2.0 (Planned)

- ☐ IoT sensor integration
- ☐ Machine learning for demand forecasting
- ☐ Advanced reporting engine
- ☐ Integration with external WMS systems

Related Projects

- [ERPNext](#) - The main ERP system
- [Frappe Framework](#) - The underlying framework



Statistics

stars repo not found

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issues repo not found

Built with ❤️ by MiniMax Agent for the ERPNext Community